

6-12-71  
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UNIVERSITY OF CALIFORNIA

SCRIPPS INSTITUTION OF OCEANOGRAPHY

from P.B. Haden  
Scripps

ARIES EXPEDITION

November 1970 - October 1971

LIST OF CORES AND DREDGE HAULS

Copied from Shipboard Logs

Depths Corrected by Matthews' Tables

R/V THOMAS WASHINGTON

Note: No geological samples were taken on ARIES  
Legs I-IV, VI and VIII.

- ARIES 1D 11 May 1971, 0357-1005 hrs.; 17°25.5'N, 175°14.6'W-17°28.3'N, 175°13.6'W; depth 2927-3002 m. 1-2 kg. foraminiferal ooze and basalt pebbles up to 2 cm diameter.
- ARIES 2D 11-12 May 1971, 2100-0121 hrs.; 17°47.1'N?, 176°05.1'W?-17°48.3'N, 176°04.1'W; depth 2017-1750 m. One 10 cm Mn nodule only.
- ARIES 3D 12 May 1971, 0337-0620 hrs.; 17°47.2'N, 176°06.7'W-17°47.3'N, 176°04.7'W; depth 1823-1768 m. Approx. 10 kg. of consolidated ooze coated with Mn crust.
- ARIES 4D 12 May 1971, 1746-2040 hrs.; 17°04.2'N, 177°19.5'W-17°04.8'N, 177°18.7'W; depth 2083-1920-2154 m. No sample. Cape Johnson Guyot, southwest side below break in slope.
- ARIES 5D 12 May 1971, 2110-2342 hrs.; 17°04.8'N, 177°18.7'W; depth 1984-1916. 15 kg. of consolidated ooze and Mn nodules.
- ARIES 6D 13 May 1971, approx. 1450 hrs.; 18°36.1'N, 179°24.5'W; depth 1702 m. Dredge and 1987 m of wire lost.
- ARIES 7D 14 May 1971, 1223-1613 hrs.; 19°14.6'N, 179°40.1'W; depth approx. 3224-2516 m. 400 lbs. Mn crust up to 5 cm thick; 250 lbs. pink to white fine-grained ash (?); 100 lbs. pale green clay; 50 lbs. red to white chert; 10 lbs. vesicular basalt; 1 piece of limestone.
- ARIES 8D 14 May 1971, 2037-2305 hrs.; 19°14.6'N, 179°50.1'W-19°13.9'N, 179°49.1'W; depth 2664-2070-2871 m. No sample.
- ARIES 9D 16 May 1971, 0610-1006 hrs.; 19°21.3'N, 176°46.8'E; depth 3672-3002 m. 15 kg. of white to pink slabs of calcareous rock, some pieces up to 40 cm, with thin Mn coating. Guyot.
- ARIES 10D 16 May 1971, 1035-1336 hrs.; 19°19.0'N, 176°44.7'E-19°18.6'N, 176°43.4'E; depth 1861-1646 m. 350 lbs. fossiliferous limestone. Same guyot as ARIES 9D.
- ARIES 11D 17 May 1971, 0108-0552 hrs.; 19°42.9'N, 175°17.6'E-19°42.97'N, 175°19.1'E; depth 4045-3456-4074 m. Six pebbles 3 cm diameter, mostly of Mn crust. North slope of fault scarp.
- AREIS 12D 17 May 1971, 2116-0002 hrs.; 20°45.1'N, 173°26.4'E, depth 1834-1253-1783 m. 250 lbs. of Mn-coated limestone. Southeast side of guyot.
- ARIES 13D 18 May 1971, 0303-0554 hrs.; approx. 20°45'N, 173°40'E; depth 3816-2955 m. 400 lbs. of volcanic breccia with 5 cm Mn coating, and vesicular basalt. Breccia has yellow ground mass which may be altered ash. Pieces range from 3 inches to 2 feet. Terrace on a seamount.

- ARIES 14D 18 May 1971, 0813-0952 hrs.; 20°46'N, 173°20.8'E; depth 1337-1271 m. One 10 inch limestone boulder with a 3 inch Mn crust. West side of ARIES 12D seamount.
- ARIES 15D 18 May 1971, 1000-1157 hrs.; 20°47.3'N, 173°20.4'E; depth 1285-1271 m. 200 lbs. of 3-inch slabs of Mn with fossils (?) on the bottom; and a small radiolarian sample. West side of ARIES 14D guyot, near break in slope.
- ARIES 16D 18-19 May 1971, 1924-0122 hrs.; 21°35.2'N, 173°49.1'E-21°36.2'N, 173°48.7'E; depth 5215-4668 m. 80 lbs. of basalt and volcanic breccia; one small piece of chert. Base of WSW-ENE-trending slope.
- ARIES 17D 22 May 1971, 0011-0400 hrs.; 21°08.9'N, 166°30'E; depth 1675-1563 m. No sample. Southeast slope of seamount.
- ARIES 18D 22 May 1971, 0414-0723 hrs.; 21°11.4'N, 166°29'E; depth 2441-1892 m. Lost dredge.
- ARIES 19D 23 May 1971, 0401-0638 hrs.; 21°08.7'N, 163°23.8'E; depth 1777-1373 m. Approx. 300 lbs. of "open-work" conglomerate consisting of pebbles in a white calcareous and possibly ash matrix; rounded cobbles and pebbles up to 16 cm of basalt and Mn nodules. East side of Wilde's Guyot.
- ARIES 20D 23 May 1971, 0821-1007 hrs.; 21°09.6'N, 163°08.8'E; depth 1468-1406 m. Approx. 200 lbs. of white, fine-grained limestone or ash, similar to ARIES 19D, except conglomerate has small basalt pebbles and is subordinate to white fine-grained material. Mn crust is up to 3 cm thick on some specimens. Slabs of rock are up to 2 feet across. Foraminifera in white material are of Eocene age. Top of Wilde's Guyot.
- ARIES 21D 24 May 1971, 0920-1143 hrs.; 21°40.7'N, 161°52.2'E-21°41.8'N, 161°52.7'E; depth 1715-1243 m. 400 lbs. similar to ARIES 19D; Size of pieces up to 2' x 1' x 1'; Mn crust varies from thin coating to 2 inches thick. Pebbles and cobbles of Mn, basalt and chert(?) floating in a white matrix of calcite and ash (?). All other cobbles are altered basalt, up to 10 inches in diameter. Pieces are commonly polygonal with slightly rounded corners. Shape is probably due to cooling stresses. Another common rock type, apparently occurring as a crust several inches thick, is off-white chert(?) and limestone(?) that supports a float of brecciated chert(?), basalt and Mn. It is probably a diagenetic fabric. West side of unnamed seamount.
- ARIES 22D 25 May 1971, 0145-0355 hrs.; 21°28.5'N, 159°38.0'E; depth 1490-1379 m. 150 lbs. similar to ARIES 20D and 21D, except no fine-grained white material. Approx. 50% is altered basalt in blocky pieces from 2 inches to 1 foot diameter; remainder is volcanic breccia (pieces less than ½ inch diameter) and chert.

- ARIES 23D 25 May 1971, 0451-0628 hrs.; 21°29'N, 159°32.3'E; depth 1273-1245-1278 m. Approx. 125 lbs., 45% of which is of two large slabs (24" x 6" x 14") of basalt and a score of small, blocky chunks of basalt approx. 6" across. Remainder of haul is Mn nodules with centers of basalt, white chert and volcanic breccia. All pieces covered with foraminiferal ooze. Top of seamount.
- ARIES 24D 25 May 1971, 0755-1025 hrs.; 21°28.8'N, 159°14.9'E; depth 1602-1401 m. Approx. 200 lbs.; 40% altered basalt as blocky chunks up to 10"; 40% buff ash in one piece 30" x 18" x 18", plus a scattering of small pieces; 15% volcanic breccia, fragments less than ½" in ash matrix; 5% buff to white chert. Mn crusts up to 2" thick.
- ARIES 25D 26 May 1971, 0231-0606 hrs.; 23°42.2'N, 159°32.8'E-23°41.9'N, 159°31.0'E; depth 2812-2370 m. Approx. 500 lbs. entirely of volcanics: 85% ash in various stages of alteration; 15% vesicular basalt. Several blocks measured 36" x 18" x 12". Ash is buff or yellow spotted with dark brown material which is probably chert. Ash is similar to that in previous several hauls. Mn crust 1" - 2" thick.
- ARIES 26D 26 May 1971, 0737-0940 hrs.; 23°48.9'N, 159°26.2'E; depth 1861-1560 m. Entirely volcanic with Mn crust up to 3". Several pieces of white ash(?) 2" x 2". Haul is 50% ash and 50% altered, blocky chunks of basalt up to 1 foot diameter.
- ARIES 27D 26 May 1971, 1207-1608 hrs.; 24°01.6'N, 159°27.0'E; depth 4079-2585 m. Approx. 800 lbs. of basalt and Mn nodules. Uncharted ridge.
- ARIES 28D 29 May 1971, 1209-1749 hrs.; 30°46.0'N, 158°41.6'E-30°46.5'N, 158°41.8'E; depth 4615-3948 m. Approx. 20 lbs.: several pieces of badly altered basalt with Mn crust up to 3" thick, and one small piece of pumice.
- ARIES 29D 31 May 1971, 1424-1702 hrs.; 29°29.4'N, 153°20.9'E-29°30.0'N, 153°22.4'E; depth 1991-1446 m. Approx. 800 lbs.: 70% volcanics, of which 42% is basalt; 25% Mn crust; and 5% fossiliferous limestone. Basalt is unaltered and in blocky chunks, several inches to 1½ feet in diameter; pumice and chert comprise the remainder of the volcanics. The limestone is coquina. The Mn crust is up to 6 inches thick, thickest of any haul thus far. Makarov Guyot, at end of seamount survey.
- ARIES 30D 31 May 1971, 1740-2105 hrs.; 29°31.3'N, 153°24.4'E; depth 1825-1391 m. Approx. 400 lbs.: 80% blocky basalt up to 1 ft. diameter, larger pieces are part of pillow. Volcanic breccias associated with chert also noted but not common. Limestone as coquina comprises remaining 20% of haul (Cretaceous). From a guyot.

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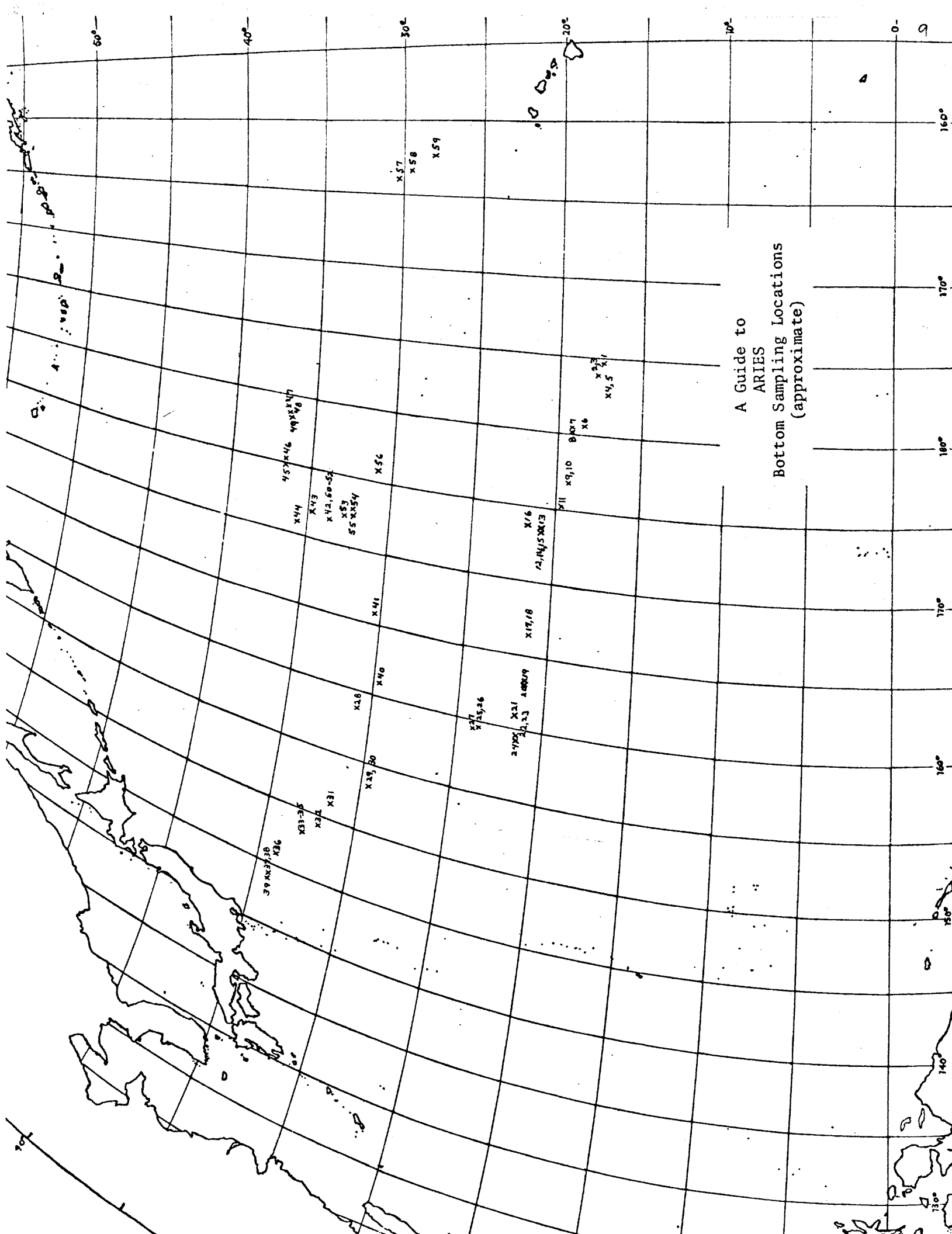
- ARIES 31D 1 June 1971, 1517-1730 hrs.; 31°33.4'N, 151°13.3'E-approx. 31°33.6'N, 151°12.1'E; depth 1768-1487 m. Approx. 500 (50?) lbs. of Cretaceous limestone with some chert and a little Mn crust. Side of Isakov Guyot.
- ARIES 32D 2 June 1971, 0804-1013 hrs.; 32°01.1'N, 149°16.4'E; depth 1697-1512 m. Approx. 800 lbs.: 99% Mn nodules; 1% Cretaceous fossil fragments, similar to those of 31D, but altered to chert. All nodules have chert centers which may be altered fossil fragments or replacement of coquina. Many nodules contain (unaltered?) fossil fragments. Mn crust up to 2 inches, but generally much thinner. Uncharted guyot.
- ARIES 33D 2 June 1971, 1732-1945 hrs.; approx. 32°48.6'N, 148°18.6'E-approx. 32°51.0'N, 148°23.6'E; depth 1898-2233 m. Approx. 25 lbs. of fossils with several 2" Mn nodules. Dredging terminated due to wind conditions. Seamount.
- ARIES 34D 2-3 June 1971, 2119-0024 hrs.; 32°45.5'N, 148°13.5'E-32°46.4'N, 148°14.6'E; depth 2262-1865 m. Approx. 800 lbs.: 50% coquina with some pieces of coral; 50% assorted siltstone and mudstone with minor pebble (10 mm) conglomerate. Siltstones are red, buff and pale green; mudstones vary from red to buff. Same guyot(?) as 33D.
- ARIES 35D 3 June 1971, 0107-0427 hrs.; 32°43.4'N, 148°14.3'E; depth 2701-1805 m. One piece of Mn crust 1 foot diameter with chert center and one 1-inch piece of pumice. Same guyot as 33D and 34D.
- ARIES 36D 4 June 1971, 0933-1400 hrs.; 34°00.6'N, 145°56.7'E; depth approx. 2046-2984 m. Approx. 600 lbs.: Primarily volcanics with some chert. Volcanics are mostly tuff breccia; some altered basalt. Mn crust up to 1 inch thick.
- ARIES 37D 5 June 1971, 0011-0325 hrs.; 34°13.2'N, 144°11.1'E; depth 1830-1693 m. Approx. 200 lbs.: 80% fossiliferous limestone, 20% claystone and mudstone; Mn coating thin or absent. Seamount.
- ARIES 38D 5 June 1971, 0438-0835 hrs.; 34°08.2'N, 144°11.2'E; depth approx. 4218-3699 m. 10 lbs. of pebble conglomerate, one piece of pumice, and some Mn crust up to 6 inches thick. Seamount.
- ARIES 39D 5 June 1971, 1209-1505 hrs.; 34°15.2'N, 143°51.2'E; depth 1898-1448 m. Approx. 300 lbs. of fossiliferous limestone with a few pieces of very fine-grained volcanics; Mn crust absent. Seamount.
- ARIES 40PG 2 August 1971, 0331-0632 hrs.; 29°39.6'N, 160°59.6'E; depth 5701 m; core length 180 cm, plus 3 cm from above barrel. Medium brown clay. Abyssal plain.

- ARIES 40P Simultaneously with 40PG. Core length: Section 1 (bottom of core), 127 cm; Section 2, 150 cm; Section 3, 150 cm; Section 4, 164 cm. Minor water pockets in upper half of Section 2; a large (13 cm) water pocket in upper portion of Section 1. Medium brown clay throughout.
- ARIES 41D 5 August 1971, 0016-0545 hrs.; 30°17.8'N, 165°45.3'E-30°19.8'N, 165°46.8'E; depth 6204-5899 m. One small (5" x 1½") piece of pumice, partly Mn coated, and approx. 5 cc of brown clay. Side of small abyssal hill.
- ARIES 42D 7 August 1971, 0117-0609 hrs.; 33°37.8'N, 171°39.5'E; depth 2478 m. Lost dredge. Side of Kinmei Seamount in the Emperor Seamounts chain.
- ARIES 43D 9 August 1971, 0235-0438 hrs.; 34°46.7'N, 171°49.8'E-34°48.5'N, 171°55.5'E; depth 823-624 m. Dredge approx. one half full: Rounded cobbles of rock (basalt and ultrafics); micritic limestone and coral (serpentinized and opalized); plus, recently deceased brittle stars, sea urchins (to approx. 5" diameter), 1 small fish; several 1½" gastropod shells; branch coral; and several shrimp-like creatures.
- ARIES 44D 10-11 August 1971, 2347-0150 hrs.; 35°34.9'N, 170°57.2'E; depth 1896-1317 m. Approx. 150 lbs. (in 3 burlap bags): Large Mn nodules and crusts; Mn coated breccia and basalt boulders; a small piece of coral, and one fish.
- ARIES 45PG 12-13 August 1971, 2202-0021 hrs.; 36°34.6'N, 174°57.0'E; depth 5195 m; core length 160 cm, plus 11 cm from bottom (in box). Light brown clay throughout. Base of Hess Rise.
- ARIES 45P Simultaneously with 45PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 150 cm; Section 3, 150 cm; Section 4, 140 cm. Light brown clay throughout.
- ARIES 46G 13 August 1971, 0242-0352 hrs.; 36°33.7'N, 175°23.2'E; depth 3666 m; core length 126 cm., plus 27 cm. from bottom (in box). 0-21 cm, tan calcareous-siliceous (?) ooze, grading downward to tan-grey to light grey calcareous-siliceous ooze at bottom; dark grey mottling at approx. 100-110 cm.
- ARIES 47G 14 August 1971, 2201-2323 hrs.; 36°45.3'N, 179°10.8'E; depth 4787 m; core length, 38 cm. Dark tan clay; unknown quantity of soupy material lost from bottom. Hess Rise.
- ARIES 48G 15 August 1971, 0149-0257 hrs.; 36°33.4'N, 178°50.3'E; depth 4482 m; core length 182 cm. 0-approx. 15 cm light brown and tan clay; remainder tan calcareous clay. Hess Rise.
- ARIES 49G 18 August 1971, 0434-0540 hrs.; 36°26.0'N, 178°38.2'E; depth 3902 m; core length, 142 cm. Upper 4 to 5 cm light brown calcareous clay with Mn nodule at top; remainder tan-white and tan calcareous ooze. Hess Rise.

- ARIES 50D 17 August 1971, 2012-2149 hrs.; 33°41.6'N, 171°34.6'E; depth 1298-975 m. Attempt to dredge near site of 42D; dredge empty. Kinmei Seamount.
- ARIES 51D 17-18 August 1971, 2228-0019 hrs.; 33°41.6'N, 171°33.1'E; depth 1558-1298 m. Dredge full, approx. 1000 lbs.+ in 24 bags: Cobbles and boulders, up to 2 feet, of sediment and rock, many with Mn coating: turbidites, chert(?), breccia, volcanic sandstone, mudstone and vesicular basalt. Large rock #1 (in 2 bags), yellow siltstone; large rock #2 (in 2 bags), breccia (?). Kinmei Seamount.
- ARIES 52D 18 August 1971, 0300-0411 hrs.; 33°40.0'N, 171°36.1'E; depth 1002-892 m. Full dredge, approx. 1800 lbs.: Cobbles and large boulders of pumice; breccia; layered, consolidated sediment; basalt and scoria. Pipe dredge contained a small amount of gravel.
- ARIES 53D 19 August 1971, 0318-0434 hrs.; 32°43.2'N, 172°12.1'E; depth 947-645 m. Dredge  $\frac{1}{4}$  full (in 5 bags): Cobbles and boulders of coral reef debris and rock; one red crab; one small starfish; one gastropod shell  $1\frac{1}{4}$ " high.
- ARIES 54D 19 August 1971, 2201-2328 hrs.; 32°17.5'N, 172°47.5'E; depth 645-411 m. Dredge  $\frac{1}{4}$  full: Pebbles and cobbles of coral reef debris; many large to small ophiuroidians; one large "gorgonian" (?); several live hermit crabs in gastropod shells; some empty gastropod shells; a small, live pecten; alive and dead coral; sea fans (?); several long-spined urchins; and other strangers.
- ARIES 55D 20 August 1971, 0402-0601 hrs.; 32°08.2'N, 172°15.7'E; depth 1360-1259 m. Dredge  $\frac{1}{2}$  full: Mn-coated cobbles and boulders from 3-4" to one large 2-foot boulder; mostly basalt.
- ARIES 56D 22 August 1971, 0704-0759 hrs.; 31°01.2'N, 175°52.4'E; depth 598-261 m. Dredge  $\frac{1}{4}$  full (in 5 bags): Coral in plate-like form, slightly coated with Mn; 1 jellyfish and some sea fans. "Fiji Maru" Seamount (actually unnamed).
- ARIES 57D 26 August 1971, 1955-2355 hrs.; 30°21.0'N, 163°51.2'W-30°21.3'N, 163°51.4'W-30°20.7'N, 163°50.8'W; depth 2362-2233-2832 m. Dredge full and bulging: Small cobbles to 2 ft.+ boulders; Mn nodules, Mn-coated basalt, chert, sediment, and other strange and wondrous things (rock types). Representative samples put in 5 burlap bags, remainder discarded. Dredge mouth nearly circular and corner welds split, therefore discarded. Mussorgski Seamount in the Musicians.
- ARIES 58D 27 August 1971, 1848-2131 hrs.; 29°33.3'N, 163°22.3'W-29°35.5'N, 163°20.5'W; depth 2496-1583 m. Dredge full: Small cobbles to boulders of Mn nodules, basalt, breccia and sediment; some Mn-coated grey-tan volcanics. Representative specimens selected (in 8 bags), remainder discarded. Also 5 sizeable dolphins. Rachmaninoff Seamount in the Musicians.

ARIES 59D 28 August 1971, 0933-1222 hrs.; 28°08.3'N, 162°16.7'W; depth  
2851-2271 m. Dredge 4/5 full: Limestone, Mn-encrusted basalt,  
breccia and chert. Selection made (16 bags), remainder discard-  
ed. Unnamed seamount in the Musicians.





A Guide to  
ARIES  
Bottom Sampling Locations  
(approximate)

X36

X31-35  
X32  
X31

X18, 30  
X18

X40

X41

X44  
X45  
X46  
X47  
X48  
X49  
X50  
X51  
X52  
X53  
X54  
X55  
X56

X27  
X28  
X29  
X30  
X31  
X32  
X33  
X34  
X35  
X36

X17, 18

X16  
X17  
X18  
X19  
X20  
X21  
X22  
X23  
X24  
X25  
X26  
X27  
X28  
X29  
X30  
X31  
X32  
X33  
X34  
X35  
X36

X9, 10  
X6

X4, 5  
X11

X57  
X58  
X59

# SCRIPPS INSTITUTION OF OCEANOGRAPHY

## Key to Abbreviations Used in Sample Descriptions ("core logs")

G: Gravity core

P: Piston core

PG: Gravity core obtained in conjunction with a piston core, and bearing the same sample number. This is also known as a "trip gravity" core since in this instance a gravity corer is used to trip the arm of the piston corer.

Note: In some core logs (e.g. Monsoon) it will be noted that there is sometimes a PG core with no accompanying P core (or vice versa). This is a result of no P sample having been obtained; therefore, even the attempt was ignored when the log was compiled. (Obviously, however, there was an attempt or there would be no PG.)

V: Heat probe core, short and of small diameter (c. 1"), developed by R. von Herzen. Occasionally regular gravity cores are used instead.

GV: AMPHITRITE Expedition ONLY: Gravity cores taken for a specific person and purpose.

Note: Such "special request" cores are frequently taken on SIO cruises; but, with the above exception, are not usually designated differently than other samples. Frequently, also, such cores are used in their entirety by the person for whom they were taken and are no longer in the SIO collection, even though they may appear in the log.

C: Very small cores obtained by corers attached to the frame of a camera.

T: Triple corer samples, some are very small, others are regular gravity cores.

Grab: Designated as such (e.g., MSN 135 grab).

S: Snapper: The proper term for "grab". May also be spelled out.

D: Dredge samples. Also used to designate subaerial samples.

H: Hydrographic PBS (Phleger Bottom Sampler). See Downwind, Horizon, DWHHI.

## Abbreviations of ship names:

A: R/V Argo (e.g., LSDA)

H: R/V Horizon (e.g., LSDH, DWH)

B: R/V Spencer F. Baird (e.g., DWB)

HMS: R/V Hugh M. Smith (e.g., FAN, HMS)

S: R/V Stranger

Note: In the LUSIAD-ARGO (LSDA) core log will also be found SCS: South China Sea.

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Use of lower case letters and prime ('): Used to indicate that two (or more) attempts were made to obtain a sample; e.g., 101 G (first attempt), 101 Ga (second attempt); or 101 Ga (first attempt), 101 Gb (second attempt). Occasionally, as in Chubasco Roman-numeraled samples, a prime mark (') has been used for this purpose, e.g., CHUB Vg, V'g. (Note that this log also uses lower case for gravity and piston core designations).

Occasionally no letter designation is used if all cores of an expedition were gravity cores.